



## Case report: Traumatic unilateral testicular rupture



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### ARTICLE INFO

#### Article history:

Received 23 February 2016

Received in revised form 31 May 2016

Accepted 31 May 2016

Available online 4 June 2016

#### Keywords:

Acute scrotum

Testicular rupture

Emergency exploration

### ABSTRACT

**INTRODUCTION:** Testicular trauma is classified aetiologically as blunt, penetrating or degloving. Blunt testicular trauma, caused by interpersonal violence, sporting injuries and RTAs account for the majority of cases, typically affecting males aged 15–40 [1]. Approximately 98.5% of blunt trauma resulted in unilateral testicular injury; about 12–15% involving cyclists or motorcyclists (Cass and Luxenberg, 1988) [2].

**PRESENTATION OF CASE:** A 48-year-old male motorcyclist presented to the accident and emergency department with an acute scrotum following collision with an oncoming vehicle. On arrival, he was fully conscious, tachycardic and hypertensive. Examination of his genitalia revealed ecchymosis of the right hemi-scrotum and perineal bruising. The right hemi-scrotum was grossly swollen but the left testis was normal. Ultrasound revealed gross haematoma and ruptured capsule of the right testicle. Intraoperatively, emergency exploration of the right hemiscrotum revealed evidence of lower pole rupture. Clot evacuation and debridement of necrotic testicular tissue preceded closure of the tunica albuginea.

**DISCUSSION:** The majority of all testicular ruptures are diagnosed secondary to sport-related injuries [3] and motor vehicle or motorbike accidents. However, analysis of the literature has revealed a total of five cases of rupture, which have been linked to testicular tumours, the most recent of which was reported in 2014 (Lunawat et al., 2014) [5]. In two out of these five cases, trivial trauma preceded the diagnosis. It raises the question whether the presence of malignancy decreases the threshold of suffering a blunt testicular injury hence increasing the likelihood of testicular rupture.

**CONCLUSION:** Emergency assessment and diagnosis as well as scrotal exploration are important components of the management of acute testicular rupture. Analysis of the literature proves that timely surgical intervention is crucial; early intervention results in higher rates of preservation and avoids the need for an orchidectomy.

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### 1. Introduction

Testicular trauma can be classified aetiologically as blunt, penetrating or degloving. Blunt testicular trauma accounts for the majority of cases, typically affecting males aged 15–40 years of age [1]. Interpersonal violence, sporting injuries and road traffic accidents are the three most common causes. Road traffic accidents involving bicycles and motor bikes account for between 9 and 17% of all blunt trauma. A study conducted in 1988 revealed that 98.5% of blunt testicular trauma resulted in unilateral testicular injury [2].

This case sets out to outline the assessment and management of blunt testicular trauma in secondary care.

### 2. Case report

A 48-year-old male motorcyclist presented to the accident and emergency department with an acute scrotum following a road traffic accident. The collision occurred as an oncoming car

attempted to make a right turn just as the motorcyclist had begun to set off at a set of traffic lights just as it had turned green. The impact of the motorcycle crashing into the left tyre of the car resulted in the motorcyclist being thrown into the air. The patient was wearing full protective gear including a helmet when his head struck the car windscreen before landing in a supine position on the road. No loss of consciousness was reported. The patient immediately experienced severe pain in his scrotum and on moving his right wrist. There was no nausea, vomiting or abdominal pain. On arrival, he was noted to be fully conscious. According to his Body Mass Index (BMI), the patient was defined as being obese class I and had been diagnosed with hypertension in the past. He was a non-smoker and consumed approximately 14 units of alcohol per week. The patient had a penicillin allergy, was not on any treatment for his hypertension and had no regular medications.

On examination, his GCS was 15 and his cervical spine assessed and cleared. His pulse was regular at 130 beats per minute with a blood pressure of 157/65. His abdomen was soft but tender in the suprapubic region. Examination of his genitalia revealed ecchymosis of the right hemi-scrotum and perineal bruising. The right hemi-scrotum was grossly swollen but the left testis was normal. No blood was visible from the urethral meatus. He was also noted

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to have swelling, tenderness and restricted range of movement of both wrists.

Blood tests confirmed a neutrophilia, raised urea and alanine aminotransferase (ALT). A Focussed Assessment with Sonography for Trauma (FAST) scan did not reveal any free intraperitoneal fluid. Ultrasonography of the urinary tract revealed approximately 100 ml of urine in the bladder, a normal left testicle and gross haematoma and ruptured capsule of the right testicle. A plain film of his right wrist revealed a comminuted intra-articular fracture of the palmar aspect of the distal radius with anterior displacement and associated anterior displacement of the carpus. There was also a transverse fracture of the ulnar styloid with slight retraction of the fractured fragment. In addition to this, he sustained a displaced volar Barton fracture of the left wrist. A pelvic X-ray did not reveal any further injury and he was subsequently catheterised. Shortly after being examined, the patient experienced a vasovagal episode. He was laid supine and oxygen was administered via a facemask. He recovered over the next five minutes and was transferred to the Resuscitation Area. The patient was consented for emergency exploration of his right testicle, manipulation under anaesthesia (MUA) of the right wrist fracture and application of plaster of Paris (POP). He was informed that there was a possibility that intra-operatively, his right testis may be discovered to be so damaged that an orchidectomy may be required.

Intraoperatively, emergency exploration of the right hemiscrotum, manipulation of the fractured left wrist and application of plaster of Paris (POP) was performed concomitantly under general anaesthetic. A midline raphe incision was made and the right testis was exposed by laying open the tunica vaginalis. The presence of a haematocele confirmed intratesticular haemorrhage had occurred. Subsequently, approximately 200–300 ml of clots were evacuated. Closer inspection of the testicle revealed a tear in the tunica albuginea as well as lower pole rupture. Debridement of necrotic testicular tissue was subsequently performed followed by closure of the tunica albuginea with vicryl sutures. Good haemostasis was achieved as the tunica vaginalis was partially closed around the testis. A corrugated drain was left in situ.

During the same admission, the patient was under the joint care of the Orthopaedic team for management of a left volar Barton fracture. The patient recovered well; his drain and catheter were removed two days post-operatively. He was discharged three days after the procedure on a weeks' course of cephalexin with district nurse follow up to review the groin wound. In addition to this, outpatient follow up was arranged by Urology and Orthopaedics within three months and one week respectively.

### 3. Discussion

The majority of all testicular ruptures are diagnosed secondary to sport-related injuries [3], most commonly in the context of being struck directly in the groin. The second most common aetiology is motor vehicle or motor bike accidents, which account for between 9% and 17% [4]. Other causes include falls and straddle injuries. However, analysis of the literature has revealed a total of five cases of rupture which have been linked to testicular tumours, the most recent of which was reported in 2014 [5]. In two out of these five cases, trivial trauma preceded the diagnosis. It raises the question whether the presence of malignancy decreases the threshold of suffering a blunt testicular injury hence increasing the likelihood of testicular rupture. Seeing as both testicular malignancies as well as blunt testicular injuries commonly affect those between 16 and

40 years of age [6], it is something that should be actively considered in those presenting with these types of injuries. In patients who are managed conservatively, should we be at least testing for serum tumour marker levels such as  $\alpha$ -fetoprotein (AFP), human chorionic gonadotrophin (hCG) and lactate dehydrogenase (LDH)?

### 4. Conclusion

Emergency assessment and diagnosis as well as scrotal exploration are important components of the management of acute testicular rupture. Analysis of the literature proves that timely surgical intervention is crucial; early intervention results in higher rates of preservation and avoids the need for an orchidectomy. In this case, we did not look at whether the patient was able to preserve the function of his right testicle by assessing his fertility following this event.

### Conflicts of interest

The author declares that there is no conflict of interests regarding the publication of this paper.

### Funding

None.

### Ethical approval

Did not require ethical approval.

### Consent

I have obtained written confirmation from this patient for publication of this case report.

### Author contribution

Main author (sole author): Dr. Natasha J. Bauer—solely involved throughout whole process of producing this case report.

### Guarantor

Dr. Natasha J. Bauer.

### Acknowledgments

None.

### References

- [1] Medscape, Testicular Trauma [Online]. Available from: <http://emedicine.medscape.com/article/441362-overview> (accessed 1.12.14).
- [2] A.S. Cass, M. Luxenberg, Value of early operation in blunt testicular contusion with hematocele, *J. Urol.* 139 (1988) 746–747.
- [3] Uptodate, Blunt genitourinary trauma: Initial evaluation and management [Online]. Available from: <http://www.uptodate.com/contents/blunt-genitourinary-trauma-initial-evaluation-and-management> (accessed 2.12.14).
- [4] A.S. Cass, Testicular trauma, *J. Urol.* 129 (2) (1983) 299–300.
- [5] R. Lunawat, M. Craciun, S. Omorphos, et al., Seminoma presented as testicular rupture: case report and literature review, *Can. Urol. Assoc. J.* 10 (9–10) (2014) E749–E751.
- [6] J.C. Buckley, J.W. McAninch, Diagnosis and management of testicular ruptures, *Urol. Clin. North Am.* 33 (1) (2006) 111–116.

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